

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

- 1-25. (Canceled)
26. (Currently Amended) Apparatus for analyzing at least one parameter of component, comprising a light source for illuminating the component with light of at least a first and second predetermined waveband, a photoreceptor or photoreceptors for receiving light of at least said first and second predetermined wavebands remitted by the component reflected by the surface at a photoreceptor or photoreceptors; surface reflection elimination means for eliminating light reflected by the surface of the component and means for analyzing the light received at the photoreceptor (s) to provide a ratio between the light of the first waveband and the light of the second waveband, and from this calculating the component ~~parameter~~parameter, where the predetermined wavebands are chosen such that the component parameter is a one to one function of the ratio between the amount of light remitted by the component of the first predetermined waveband and the amount of light remitted by the component of the second predetermined waveband.
27. (Canceled)
28. (Original) Apparatus according to claim 26, in which the photoreceptor comprises a digital camera.
29. (Original) Apparatus according to claim 28, in which the digital camera includes a plurality of filters, one for each predetermined waveband.
30. (Original) Apparatus according to claim 26 in which the light source is ambient light.
31. (Currently Amended) Apparatus according to ~~claim 27~~claim 26, in which the distance between the photoreceptor (s) and the component is between 0.5cm and 10m.

32. (Currently Amended) Apparatus according to ~~claim 33~~claim 26, in which the distance between the light source and the component is between 0.5cm and 10m.

33-44. (Canceled)

45. (Previously Presented) Apparatus for determining the distribution of chromophores and/or the thickness of structural layers in a sample of epithelial tissue, the apparatus comprising:

a polarized light source operable to illuminate a sample of epithelial tissue with polarized light having wavelengths falling within a first, second, and third predetermined wavebands;

a polarizing filter positioned so as to filter light remitted from a sample of epithelial tissue said polarizing filter being such to filter out light polarized in the manner generated by said polarized light source;

an image generator operable to detect filtered remitted light from a sample of epithelial tissue and generate image data indicative of the intensity of filtered remitted light received by said image generator having wavelengths falling within said first, second and third predetermined wavebands;

a ratio determination module operable to process image data generated by said image generator to determine for positions within images represented by said image data, a first ratio corresponding to the ratio of light received by said image generator having wavelengths within said second waveband relative to light having wavelengths within said first waveband, and a second ratio corresponding to the ratio of light received by said image generator having wavelengths within said third waveband relative to light having wavelengths within said first waveband;

a concentration determination module operable to determine for positions within an image represented by image data generated by said image generator the concentrations of

chromophores and/or the thickness of structural layers of said epithelial tissue at said positions in a sample of epithelial tissue represented by said image data utilizing said first and said second ratios determined for said positions by said ratio determination module; and

an output module operable to output data representing determined concentrations of chromophores and/or thickness of structural layers for points a sample of epithelial tissue as determined by said concentration determination module.

46. (Previously Presented) Apparatus in accordance with claim 45 wherein said image generator comprises a digital camera.

47. (Previously Presented) Apparatus in accordance with claim 45 wherein said first waveband comprises a waveband corresponding to red light.

48. (Previously Presented) Apparatus in accordance with claim 45 wherein said second waveband comprises a waveband corresponding to green light.

49. (Previously Presented) Apparatus in accordance with claim 45 wherein said third waveband comprises a waveband corresponding to blue light.

50. (Currently Amended) Apparatus in accordance with claim 45 wherein said first waveband comprises a waveband centered on a wavelength of ~~700nm~~ 700nm.

51. (Previously Presented) Apparatus in accordance with claim 45 wherein said second waveband comprises a waveband centered on a wavelength of 560nm.

52. (Previously Presented) Apparatus in accordance with claim 45 wherein said third waveband comprises a waveband centered on a wavelength of 473nm.

53. (Previously Presented) Apparatus in accordance with claim 45 wherein one of said first, second or third wavebands comprises infra red light.

54. (Previously Presented) Apparatus in accordance with claim 45 wherein said concentration determination module comprises a look up table associating pairs of first and second ratios generated by said ratio determination module with items of data identifying

concentrations of blood and melanin which when illuminated with polarized light are liable to remit cross polarized light having wavelengths falling within said first, second and third wavebands at said first and second ratios.

55. (Previously Presented) Apparatus in accordance with claim 54 wherein said pairs of first and second ratios and said concentrations of blood and melanin comprise ratios and concentrations determined by analyzing samples of epithelial tissue.

56. (Previously Presented) Apparatus in accordance with claim 54 wherein said pairs of first and second ratios and said concentrations of blood and melanin comprise ratios and concentrations determined utilizing a mathematical model of the expected remittance of illuminated light by samples of epithelial tissue having differing concentrations of blood and melanin.

57. (Previously Presented) Apparatus in accordance with claim 45 wherein said concentration determination module is operable to determine values representative of concentrations of blood and melanin by applying a predetermined mathematical function to first and second ratios for a position as determined by said ratio determination module.

58. (Previously Presented) Apparatus in accordance with claim 45 wherein said concentration determination module comprises a look up table associating pairs of first and second ratios generated by said ratio determination module with items of data identifying concentrations of blood and tissue thickness which when illuminated with polarized light are liable to remit cross polarized light having wavelengths falling within said first, second and third wavebands at said first and second ratios.

59. (Previously Presented) Apparatus in accordance with claim 58 wherein said pairs of first and second ratios and said concentrations of blood and tissue thickness comprise ratios and concentrations determined by analyzing samples of epithelial tissue.

60. (Previously Presented) Apparatus in accordance with claim 58 wherein said pairs of first and second ratios and said concentrations of blood and melanin comprise ratios and concentrations determined utilizing a mathematical model of the expected remittance of illuminated light by samples of epithelial tissue having differing concentrations of blood and tissue thickness.

61. (Previously Presented) Apparatus in accordance with claim 45 wherein said concentration determination module is operable to determine values representative of concentrations of blood and tissue thickness by applying a predetermined mathematical function to first and second ratios for a position as determined by said ratio determination module.

62. (Previously Presented) Apparatus in accordance with claim 45 wherein said polarized light source operable to illuminate a sample of epithelial tissue with polarized light comprises:

a light source; and

a polarizing filter arranged to polarize light generated by said light source.

63. (Previously Presented) Apparatus in accordance with claim 62 wherein said light source is operable to illuminate a sample of epithelial tissue sequentially with light having wavelengths falling within different ones of said first, second and third predetermined wavebands.

64-74. (Canceled)